

IN THE CLAIMS:

Please insert the following amended claims:

Sub B1. (Amended) A method of mapping a topology of the spare capacity of a distributed restoration algorithm (DRA) provisioned telecommunications network having a plurality of nodes interconnected with working and spare links, comprising the steps of:

- A
- 1
- a) outputting a message from each spare link of each said nodes to the adjacent node to which said each spare link is connected;
  - b) identifying the port number of said each node from where said each spare link outputs said message and the port number of the adjacent node connected to said each spare link whereat said message is received;
  - c) storing as data, in one location, the respective port numbers of all nodes that have connected thereto at least one spare link via which said message is either sent or received, the identities of said all nodes and the spare links interconnecting said all nodes; and
  - d) generating from said stored data the topology of all spare links interconnecting all the nodes of said network.

REMARKS

In response to the Office Action dated October 9, 2001, reconsideration and allowance of the present application are respectfully requested. Claims 1-10 are pending in the application. Applicant notes, with appreciation, the indication that claims 2, 4 and 5 contain allowable subject matter. Please note that Applicant has amended page 1 of the specification to include proper related application information.

In paragraph 1 of the Office Action, claim 1 is objected to due to a minor informality. By the foregoing amendment, Applicant has amended claim 1 to address this concern and correct other minor informalities.

In paragraphs 2 through 4 of the Office Action, claims 1, 3 and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,646,936 to Shah et al. This rejection is respectfully traversed because the foregoing patent, even if considered in the manner

suggested by the Examiner, fails to teach or suggest Applicant's invention as currently set forth in independent claims 1, 6 and 9.

For example, in an exemplary embodiment of the present invention as currently set forth in independent claim 1, a method of mapping a topology of the spare capacity of a distributed restoration algorithm (DRA) provisioned telecommunications network is disclosed. The network includes a plurality of nodes interconnected with working and spare links. The method includes outputting a message from each spare link of each said nodes to the adjacent node to which said each spare link is connected, identifying the port number of said each node from where said each spare link outputs said message and the port number of the adjacent node connected to said each spare link whereat said message is received, storing as data the respective port numbers of all nodes that have connected thereto at least one spare link via which said message is either sent or received, the identities of said all nodes and the spare links interconnecting said all nodes, and generating from said stored data the topology of all spare links interconnecting the nodes of said network.

The Office Action of October 9, 2001 indicates that Shah discloses Applicant's claimed step of "storing as data the respective port numbers of all nodes that have connected thereto at least one spare link via which said message is either sent or received, the identities of said all nodes and the spare links interconnecting said all nodes." Applicant respectfully submits that the Office Action, in fact, has not pointed to such a teaching. Shah includes a spare channel manifest 300 including a leader/follower identifier 301 and spare channel indicators 312. Additionally, Shah indicates that a single spare channel manifest 300 is stored in memory 202 at a particular node (column 5, lines 54-67 of Shah). The present invention, on the other hand, stores data "in one location the respective port numbers of all nodes that have connected thereto at least one spare link via which said message is either sent or received, the identities of said all nodes and the spare links interconnecting said all nodes." Thus, Applicant submits that such a feature has not been pointed out in the Shah patent.

Additionally, Applicant submits that the Shah patent cannot be seen to teach "generating from said stored data the topology of all spare links interconnecting all the nodes of said network." Since the Shah patent separately stores a spare channel manifest in each node, a topology of all spare links interconnecting all the nodes is not generated. Furthermore, Applicants submit that the Figure 2 network shown by Shah is not a generated topology based

upon the centrally located data but instead an exemplary communications network (see column 5, lines 14-16).

Finally, Applicant submits that contrary to the statement in the Office Action, there is no support for the notion that the step of “identifying the port number of each node from where each spare link outputs said message...” is obvious in view of Shah. In fact, Shah describes the use of leader/follower information” which does not disclose or suggest port numbers, as set forth in independent claims 1 and 9 (discussed below). In fact, Applicant submits that improper hindsight is being employed to fuel the reasoning employed in the Office Action.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of independent claim 1. Furthermore, Applicant requests reconsideration and withdrawal of the rejection of claim 3, which depends from claim 1, for at least the same reasons described above.

Turning to independent claim 6 of the present invention, Applicant respectfully submits that each and every feature of the present invention has not been pointed out by or indicated as being suggested by the Shah patent. Specifically, another exemplary embodiment of the present invention, as set forth in claim 6, is directed to a method of continuously monitoring the spare capacity of said network, comprising the steps generating keep alive messages, continuously exchanging said keep alive messages on the spare links of said network when a DRA event is not in progress, and recording the various spare ports that transmitted and received said keep alive messages to determine the number of spare links available in said network.

With regard to independent claim 6, the Office Action indicates that request messages illustrated in Figure 8 of Shah “are transmitted between various nodes.” However, Applicant submits that the Office Action does not point to a teaching, within Shah, of continuously exchanging said keep alive messages on the spare links of said network when a DRA event is not in progress, as recited in claim 6. In fact, Shah appears to teach directly away from sending these messages even when a DRA event is not in progress. As described in column 6 lines 64-66, the message is identified as a REQUEST (REQ), an ACKNOWLEDGEMENT (ACK) or REJECT (REJ)”. As further described in column 7 of Shah, the messages appear to be sent only when an event (e.g., a failed link) occurs (see column 7, line 3). Accordingly, since it appears that the messages of Fig. 8 are sent to initiate or reply to an event, the rejection in the Office Action cannot be maintained since the Office Action has shown no disclosure that the messages

of Shah are continuously exchanging when a DRA event is not in progress. For at least this reason, Applicant requests reconsideration and withdrawal of the rejection.

Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 7 and 8, which depend from claim 6, for at least the same reasons described above.

Additionally, Applicant respectfully submits that independent claim 9 is not taught or suggested by the teachings of the Shah patent. Exemplary embodiments of the present invention as set forth in independent claim 9 are directed to a message being transmitted between adjacent nodes of said network that are connected by at least one spare link for mapping the topology of the spare capacity of said network. The message includes a first field containing the identification number of the node that sent said message, a second field containing the identification number of the port of said node whence said message is output, and a third field having an identifier that is set to a specific value when said node is one of the custodial nodes that bracket a failed link, wherein, when there is a failed link, said message is broadcast from one of the custodial nodes that bracket said failed link.

Applicant respectfully submits that Shah does not teach or suggest Applicant's claimed message. For example, the Office Action has not pointed out any location where a message includes a field having an identifier that is set to a specific value when said node is one of the custodial nodes that bracket a failed link as set forth in claim 9. Applicant respectfully requests that if this rejection is maintained, a portion of the Shah patent be referenced to show such a teaching. Also, Applicant submits that Office Action has not pointed out any location where when there is a failed link, said message is broadcast from one of the custodial nodes that bracket said failed link. Applicant requests that if this rejection is maintained, a portion of the Shah patent be referenced to show such a teaching.

Additionally, Applicant submits that, as discussed above with respect to claim 1, there is no suggestion within the Shah patent for "a second field containing the identification number of the port of said node whence said message is output," as currently set forth in claim 9. In the absence of such teachings or suggestions to modify Shah, Applicants respectfully request reconsideration and withdrawal of the rejection.

Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 10, which depends from claim 9, for at least the same reasons described above.

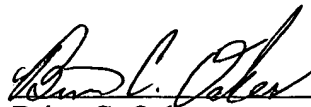
All objections and rejections raised in the Office Action having been addressed, it is respectfully submitted that the present application is in condition for allowance and such

allowance is respectfully solicited. In the event there are any issues left unresolved by this Amendment, Examiner is requested to contact the undersigned attorney at (202) 736-6371.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "**Version With Markings to Show Changes Made**".

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 13-2491 and please credit any excess fees to such deposit account.

Respectfully submitted,



Brian C. Oakes  
Reg. No. 41,467

Dated: January 9, 2002

WorldCom, Inc.  
1133 19<sup>th</sup> Street, NW  
Washington, D.C. 20036

Phone: (202) 736-6371  
Fax: (202) 736-6824



Serial No.: 09/152,008  
Examiner: K. Harper

Version With Markings to Show Changes Made

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IN THE SPECIFICATION:

The specification was changed as follows on page 1 of the specification:

This application is a continuation-in-part of patent application serial number 09/038,531 filed on March 11, 1998, which claims priority under 35 U.S.C. § 119(e) to provisional application number 60/040536, filed March 12, 1997. The instant invention relates to the following applications having serial No. 09/046,089 filed March 23, 1998, serial No. 09/151,320 [\_\_\_\_\_] (ALCA-1100-2)] entitled "Restricted Reuse of Intact Portions of Failed Paths"[,] and serial No. 09/152,224 [\_\_\_\_\_] (ALCA-1100-7)] entitled "Signal Conversion for Fault Isolation"[, and serial No. \_\_\_\_\_ (ALCA-1100-6) entitled "Method and Message Therefor of Monitoring The Spare Capacity of a DRA Network". The respective disclosures of those applications are incorporated by reference to the disclosure of the instant application].

IN THE CLAIMS:

The claims were amended as follows:

1. (Amended) A method of mapping a topology of the spare capacity of a distributed restoration algorithm (DRA) provisioned telecommunications network having a plurality of nodes interconnected with working and spare links, comprising the steps of:

- a) outputting a message from each spare link of each said nodes to the adjacent node to which said each spare link is connected;
- b) identifying the port number of said each node from where said each spare link outputs said message and the port number of the adjacent node connected to said each spare link whereat said message is received;

c) storing as data, in one location, the respective port numbers of all nodes that have connected thereto at least one spare link via which said message is either sent or received, the [identifies] identities of said all nodes and the spare links interconnecting said all nodes; and

d) generating from said stored data the topology of all spare links interconnecting all the nodes of said network.